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SIDLEY AUSTIN LLP
717 NORTH HARWOOD
SUITE 3400
DALLAS, TX 75201

EXAMINER	
YUAN, KATHLEEN S	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/620,729	IMAI ET AL.	
	Examiner	Art Unit	
	Kathleen S. Yuan	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The response received on 4/23/2007 has been placed in the file and was considered by the examiner. An action on the merit follows.

Response to Amendment

1. The amendments filed on 23 April 2007 have been fully considered. Response to these amendments is provided below.

Summary of Arguments/Amendments and Examiner's Response:

2. The applicant has amended independent claims to include different variations of a more limiting scope. The applicant further adds claims.

3. The applicant argues that Kawashima et al does not disclose a system that conducts stereoscopic object measurement and a system where image data from common cameras is switched for processing between 2D and 3D.

4. The Examiner would like to point out that there is a stereoscopic object measurement (fig. 14, item 14). Kawashima et al does not expressly disclose switching, but the rejection below will show that Kawashima et al is still applicable.

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

6. Claim 30 is objected to because of the following informalities: Claim 30 states," a the camera positional control device;" the examiner interprets the claim to read simply, "the camera positional control device" which refers back to the camera positional control device of claim 26. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 7-8, 14, 16 and 28-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. The rejection on claims 7 and 8 are maintained. Basically, the applicant has argued that the claims are enabled and indicates in the specification where the claims have mentioned symmetrically and synchronously. However, the rejection is based on the terms being used as an incorrect description. The claim does not meet the requirements of clarity and precision because the claims describe moving symmetrically and synchronously, where the applicant uses the term to mean that the cameras move using panning and tilting. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350,

1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The term "symmetrically" in claim 7 and "synchronously" in claim 8 is used by the claims to mean rotated horizontally and rotated vertically as shown by fig. 1, items 12, 22 and 13, 23 and as indicated by the specification, while the accepted meaning is "mirrored about an axis/characterized by or exhibiting symmetry/ regular in form or arrangement" and "at the same time or rate/ going at the same rate and exactly together". The term is indefinite because the specification does not clearly redefine the term.

10. Regarding claim 14, it is unclear what the switching portion is switching between. The language in the claim makes this very confusing. It may be read that the switching is between (measurement of the object based on the images of the object from the cameras using the two-dimensional measurement portion) and (using the stereoscopic measurement portion based on a current selection of the two-dimensional measurement portion and the stereoscopic measurement and based on an output from one of the two-dimensional measurement portion and the stereoscopic measurement portion). It may also be read that the switching is between (measurement of the object based on the images of the object from the cameras using the two-dimensional measurement portion and using the stereoscopic measurement portion based on a current selection of the two-dimensional measurement portion) and (the stereoscopic measurement and based on an output from one of the two-dimensional measurement portion and the stereoscopic measurement portion). It may also be read that the switching is between (measurement of the object based on the images of the object from the cameras using the two-dimensional measurement portion and using the stereoscopic measurement

portion based on a current selection of the two-dimensional measurement portion and the stereoscopic measurement which are based on an output from one of the two-dimensional measurement portion) and (the stereoscopic measurement portion). Many different variations can be read in this language that deems it unclear and confusing. By adding a "between" between the two modes of switching, the claim might appear clearer.

11. Regarding claims 28 and 29, the claim refers to," the image data." It is unclear as to which image data the applicant is referring to, since there is first mode image data and second mode image data. Appropriate correction is required.

12. Claim 30 recites the limitation "the absence" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 26-28 are rejected under 35 U.S.C. 102(b) as being unpatentable by U.S. Patent No. 6079862 (Kawashima et al).

15. Regarding claim 26, Kawashima et al discloses an apparatus comprising: a camera positional control device which is configured to generate signals to control the positions of the cameras to change photographing directions of the cameras (fig. 14,

items 10a and 10b), the signals being whatever signals the moveable tables must generate to move the cameras; a two-dimensional image processing system which is configured to perform two-dimensional evaluation of image data, an object recognition and a coordinate measurement, obtained by at least a first one of the cameras to detect an object (fig. 14, items 5a, 5b, 15a and 15b); a stereoscopic image processing system (fig. 14, item 14) which is configured to perform stereoscopic evaluation of image data, a 3D coordinate, obtained from both the first one of the cameras and a second one of the cameras to detect an object (fig. 14, items 4a and 4b provide image data for all measurements including detecting an object: items 5a and 5b and other image data such as the coordinate calculation: items 15a and 15b, and continues to 3D measurements, fig. 14, item 14); and a controller which is configured to control the operation of the cameras and the camera positional control device (fig. 14, items 12a and 12b and any of the arrows or processes that control the operation of the device, in particular, the arrow between 15a and 15b to item 14), said controller also being configured to control a mode of operation of the apparatus such that in a first mode, the mode carried out in fig 14, items 5a, 5b 15 and 15b, image data obtained by at least a first one of the cameras is evaluated by said two-dimensional image processing system and in a second mode, the mode carried out in fig. 14, items 14, 6, 11, and 7, image data obtained from both the first one of the cameras and a second one of the cameras are evaluated by said stereoscopic image processing system, since the image data calculated from the previous steps are input all input into item 14, said controller further being configured to switch between said first and second modes of operation, as seen

by the arrow switching the mode of operation by continuing the process, based on a current mode of said apparatus, the mode being that the coordinates are calculated from items 15a and 15b, and an output from the two-dimensional image processing system, the output of the 2D mode, which is input for the 3D mode.

16. Regarding claim 27, Kawashima et al discloses that the two-dimensional image processing system is configured in said first mode to perform two-dimensional evaluation of image data obtained from at least one of said cameras to detect an object, as detected by the image recognition units (fig. 14, item 5a and 5b), which receives its input from cameras 4a and 4b.

17. Regarding claim 28, Kawashima et al discloses the controller is configured to switch from said first mode to said second mode based on an output from the two-dimensional image processing system, since the arrow between items 15a and 15b to item 14 outputs the information from the first mode, which indicates the presence of an object detected in the image data, as executed by the image recognition units (fig. 14, items 5a and 5b).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. Claims 1-8, 13-14 and 16-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6079862 (Kawashima et al) in view of U.S. Patent No. 7161614 (Yamashita et al).

Regarding claim 1, Kawashima et al discloses a system comprising: a positional control portion for controlling positions of the cameras to change photographing directions of the cameras (fig. 14, items 12a, 12b, 10a, 10b); a two-dimensional measurement portion for conducting two-dimensional measurement of the object based on the image of the object, the measurements being either the image recognition measurements and/or the coordinate calculation measurements, the image being obtained by at least one of the cameras (fig. 14, items 5a, 5b, 15a, and 15b); a stereoscopic measurement portion for conducting stereoscopic measurement of the object, a three dimensional coordinate calculation, based on the images of the object (fig. 14, item 14), the images being obtained by at least two of the cameras said at least two cameras including at least the camera for providing an image for the two-dimensional measurement portion (fig. 14, items 4a and 4b); and switching to 2D to 3D measurements seen in fig. 14, switching to 15a or 15b to 14 to perform an operation (fig. 14, item 7).

Kawashima et al does not disclose expressly that the switching occurs by a switching portion.

Yamashita et al discloses using a switching means for transitioning between 2D to 3D measurements (col. 7, lines 50-57).

Kawashima et al and Yamashita et al are combinable because they are from the same field of endeavor, i.e. 2D and 3D imaging.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to have a switching means to control the switching between 2D to 3D.

The suggestion/motivation for doing so would have been to provide a more precise, accurate and robust system by clearly switching over information instead of proceeding to the next step, allowing users to control the process if desired.

Therefore, it would have been obvious to combine the system of Kawashima et al with the switching means of Yamashita et al to obtain the invention as specified in claim 1.

20. Regarding claim 2, Kawashima et al disclose that a 2D measurement portion conducts a 2D measurement based on the image obtained by only one of the cameras when showing that each camera has only one 2D measurement portion (fig. 14, item 4a corresponds to items 5a and 15a and item 4b corresponds to items 5b and 15b). Thus each 2D measurement contains only one 2D portion each.

21. Regarding claim 3, Kawashima discloses that the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}), and the cameras are controlled so as to photograph ranges differing from each other, to track object 6 of fig. 16, thus having the different direction Θ_{m1t} and Θ_{m2t}, and to face directions differing from each other, as seen in fig. 16. This is all done when the two dimensional measurement is conducted because these cameras are CCD cameras that

obtain images in 2D (col. 15, line 25), in which 3D coordinates can later be calculated (fig. 14, item 14).

22. Regarding claim 4, Kawashima discloses that the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}), and the positions of the cameras are controlled so that the cameras photograph an overlapping range when the stereoscopic measurement is conducted, since the cameras are controlled to track an object as allowed by items 12a and 12b of fig. 14, thus overlapping a range since the object must be in both the images.

23. Regarding claim 5, Kawashima et al discloses the positional control portion controls the positions of the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}) and face directions different from each other, as seen in fig. 15, when the 2D measurement portion conducts 2D measurement, since the cameras follow an object (col. 15, lines 27-30) and the positions of the cameras are controlled so that the cameras photograph an overlapping range when the stereoscopic measurement is conducted, since the cameras are controlled to track an object as allowed by items 12a and 12b of fig. 14, thus overlapping a range since the object must be in both the images. Kawashima et al further discloses switching between operating the two-dimensional measurement portion in an initial condition, a condition that the image is taken by cameras (fig. 14, items 4a and 4b), operating the stereoscopic measurement portion (fig. 14, arrow between items 15a and 15b to item 14) when the two-dimensional measurement portion detects a moving object (fig. 14, items 12a and 12b). Yamashita et al disclose the switching be done by a switching means, as described above.

24. Regarding claim 6, the positional control portion controls the entire position and posture of the cameras, since items 10a and 10b are rotating tables (col. 15, line 27), allowing for any position or posture of the cameras.

25. Regarding claim 7, cameras are controlled so as to move symmetrically as defined by the applicant, in Kawashima et al (fig. 2, axis of rotation between 3a and 2 for camera 4)

26. Regarding claim 8, in Kawashima et al, positional control portion allows for control of the position and posture of each of the cameras since it allows for rotation about the two axes in fig. 2 of the axis between items 3a and 2, and the axis at 3b. The cameras are controlled so as to move synchronously as defined by the applicant, as seen by the axis of rotation in item 3b.

27. Regarding claim 13, Kawashima et al discloses that the camera position control system is configured to control the positions of the cameras independently from each other when the two-dimensional measurement portion conducts two-dimensional measurement, since one movement of the camera is not dependent on the other movement, they simply follow the object and take images of them (col. 15, lines 25-30), and to control the positions of the cameras concurrently, since they both move at the same time to follow the object, as described above, when/as the stereoscopic measurement portion conducts stereoscopic measurement, since as processing continues, the camera is still following the object.

28. Regarding claim 14, Kawashima et al discloses the switching is configured to switch between measurement of the object based on the images of the object from the

cameras using the two-dimensional measurement portion (fig. 14, items 5a, 5b) and using the stereoscopic measurement portion based on a current selection of the two-dimensional measurement portion and the stereoscopic measurement (fig. 14, item 14, in which the images from the 2D portion enter 3D calculations) and based on an output from the two-dimensional measurement portion, since it uses the 2D measurement portion to get through to the 3D portion, as seen in fig. 14. Yamashita et al disclose the switching be done by a switching means, as described above.

29. Regarding claim 16, Kawashima et al discloses switching between measurement of the object using the two-dimensional measurement portion (fig. 14, items 5a and 15a) and using the stereoscopic measurement portion (fig. 14, item 14) based on whether an object is detected (fig. 14, item 5a). Yamashita et al disclose the switching be done by a switching means, as described above.

30. Regarding claim 17, Kawashima et al discloses a system comprising: a camera position control system for outputting camera position control signals to change photographing directions of the cameras, a movable control unit (fig. 14, items 12a and 12b) which outputs desired movements of the cameras, said camera position control system being configured to enable control of directions of the two cameras independently from each other, since both cameras individually follow the object (fig. 14, item 12a and 12b) and do not move depending on the movement of the other camera; a two-dimensional measurement device for conducting two-dimensional measurement of the object based on the image of the object, the image being obtained by at least one of the cameras (fig. 14, items 5a, 5b, 15a and 15b); a stereoscopic measurement device

for conducting stereoscopic measurement of the object based on the images of the object, 3D coordinates (fig. 14, item 14), the images being obtained by both of the cameras (fig. 14, items 4a and 4b follow all the way down to item 14); and switching to 2D to 3D measurements seen in fig. 14, switching to 15a or 15b to 14 to perform an operation (fig. 14, item 7).

Kawashima et al does not disclose expressly that the switching occurs by a switching portion.

Yamashita et al discloses using a switching means for transitioning between 2D to 3D measurements (col. 7, lines 50-57).

31. Regarding claim 18, Kawashima discloses that the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}), when any of the measurements occur, including the 2D measurements, as shown, for instance, in fig. 15). Furthermore, Kawashima et al discloses that the positions of the cameras are controlled so that the cameras photograph an overlapping range when the stereoscopic measurement is conducted, since the cameras are controlled to track an object as allowed by items 12a and 12b of fig. 14, thus overlapping a range since the object must be in both the images. Kawashima et al discloses switching to operate the two-dimensional measurement portion in an initial condition, the condition that images have just been taken (fig. 14, items 5a, 5b, 15a and 15b), and switches to operate the stereoscopic measurement portion (fig. 14, item 14), since after the 2D measurement is done, it moves on to a 3D measurement, when the two-dimensional measurement

portion detects an object (fig. 14, items 5a and 5b). Yamashita et al disclose the switching be done by a switching means, as described above.

32. Regarding claim 19, Kawashima et al discloses switching to operate the stereoscopic measurement portion, as it continuously does so that the lighting can track the object (col. 15, lines 54-59), when the two-dimensional measurement portion detects a moving object since the 2D measurement portion tracks a moving object (col. 15, lines 28-30), and thus detects the moving object. Yamashita et al disclose the switching be done by a switching means, as described above.

33. Regarding claim 20, Kawashima et al discloses that the camera position control system is configured to control the positions of the cameras independently from each other when the two-dimensional measurement portion conducts two-dimensional measurement, since one movement of the camera is not dependent on the other movement, they simply follow the object and take images of them (col. 15, lines 25-30), and to control the positions of the cameras concurrently, since they both move at the same time to follow the object, as described above, when/as the stereoscopic measurement portion conducts stereoscopic measurement, since as processing continues, the camera is still following the object.

34. Regarding claim 21, Kawashima et al discloses a system comprising: a positional control portion for controlling positions of the cameras to change photographing directions of the cameras (fig. 14, items 10a, 10b, 12a and 12b); a two-dimensional measurement portion for conducting two-dimensional measurement of the object based on the image of the object, the image being obtained by at least one of the cameras (fig.

14, item 5a, 5b, 15a and 15b); a stereoscopic measurement portion for conducting stereoscopic measurement of the object based on the images of the object, the images being obtained by at least two of the cameras (fig. 14, item 14); and switching to 2D to 3D measurements seen in fig. 14, switching to 15a or 15b to 14 to perform an operation (fig. 14, item 7). The switching is configured to control the provision of images from the cameras to the measurement portions, since the switching between 2D and 3D measurements controls the lighting and thus controls the provision of images (col. 5, lines 54-60) such that said at least two of the cameras from which images are obtained for conducting stereoscopic measurement include said at least one of the cameras from which the image of the object is obtained for the two-dimensional measurement portion, since both the images of the objects are used as the portion. From cameras 4a and 4b are used for the 3D measurement.

Kawashima et al does not disclose expressly that the switching occurs by a switching portion.

Yamashita et al discloses using a switching means for transitioning between 2D to 3D measurements (col. 7, lines 50-57).

35. Regarding claim 22, Kawashima et al discloses switching from said two-dimensional measurement portion to said stereoscopic measurement portion based, at least in part, on a measurement of the object conducted by said two-dimensional measurement portion, since the 2D measurement portion of items 15a and 15b are input into item 14. Yamashita et al disclose the switching be done by a switching means, as described above.

36. Regarding claim 23, Kawashima et al discloses switching from said two-dimensional measurement portion to said stereoscopic measurement portion (fig. 14, arrow between items 15a and 14) when said two-dimensional measurement portion detects an object (fig. 14, items 5a and 5b). Yamashita et al disclose the switching be done by a switching means, as described above.

37. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view of Yamashita et al, as applied to claim 1 above, and further in view of U.S. Patent No. 3267431 (Greenberg et al).

Regarding claim 9, Kawashima et al (as modified by Yamashita et al) discloses all of the claimed elements as set forth above, and incorporated herein by reference.

Kawashima et al (as modified by Yamashita et al) does not disclose expressly an alarm output portion for raising an alarm based on an alarm signal output from the switching portion.

Greenberg et al discloses having an indicator to show a mode switch (col. 14, lines 1-5).

Kawashima et al (as modified by Yamashita et al) and Greenberg are combinable because they are from the same field of endeavor, i.e. image processing systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to raise alarm in the switching portion.

The suggestion/motivation for doing so would have been to provide the user with indication of what the image processing system is doing, thus providing a more user-friendly system.

Therefore, it would have been obvious to combine the system of Kawashima et al (as modified by Yamashita et al) with the indicator of Greenberg et al to obtain the invention as specified in claim 9.

38. Regarding claim 10, Greenberg et al discloses the alarm output portion raises the alarm, or turns on the indicator, when the switching portion switches (col. 14, lines 1-5). Kondo et al discloses that the switching portion, a controller, switches between the two-dimensional measurement portion and the stereoscopic measurement portion to perform an operation since it controls the operation of items 64 and 66 (fig. 2, item 62).

39. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view of Yamashita et al, and further in view of U.S. Patent Application Publication No. 20030081821 (Mertelmeier et al) and further in view of U.S. Patent No. 6597801 (Cham et al).

Kawashima et al (as modified by Yamashita et al) discloses all of the claimed elements as set forth above, and incorporated herein by reference. Furthermore, Yamashita et al further discloses different types of 2D (col. 7, lines 44-52) and 3D (col. 7, line 60- col. 8, line 6) measurements that can be made in 2D and 3D measurement portions, including finding a stereoscopic video signal.

Kawashima et al (as modified by Yamashita et al) does not disclose expressly reducing resolution of the images, and switches between generation of data with high resolution and generation data with low resolution appropriately to conduct stereoscopic measurement.

Mertelmeier et al discloses switching in alternation between a high and low resolution for stereoscopic imaging to develop multiply resolved images (pg. 1, pp 0008).

Kawashima et al (as modified by Yamashita et al) and Mertelmeier et al are combinable because they are from the same field of endeavor, i.e. 3D imaging.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to switch between high and low resolution for 3D imaging.

The suggestion/motivation for doing so would have been to provide a more robust system by allowing different, multiply resolved volume images (Mertelmeier et al, page 1, paragraph 002) for possible examination and a more flexible system for examination. Providing many resolutions is beneficial because this allows for a more effective search of images for size-based features, as disclosed by Cham et al (col. 8, lines 35-54), thus providing a more robust system.

Kawashima et al (as modified by Yamashita et al and Mertelmeier et al) and Cham et al are combinable because they are of the same field of endeavor, i.e. tracking objects.

Therefore, it would have been obvious to combine the system of Kawashima et al (as modified by Yamashita et al) with the resolution switch of Mertelmeier and the

reasons of having multiple resolutions of Cham et al to obtain the invention as specified in claim 11.

40. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view of Yamashita et al, and further in view of U.S. Patent No. 6396397 (Bos et al) and Examiner's Official Notice.

Kawashima et al (as modified by Yamashita et al) discloses all of the claimed elements as set forth above, and incorporated herein by reference.

Kawashima et al (as modified by Yamashita et al) does not disclose expressly each of the cameras includes an image pickup device in which a color filter having any one of three primary colors is arranged for each pixel, and when image data obtained by the cameras are processed, image data of pixels corresponding to only a color filter with a particular color in the image pickup device of each of the cameras are used.

Bos et al discloses a color filter (col. 7, line 56) on the sensors, which is equivalent to the camera, which is used to process image data corresponding to only a red color (col. 7, line 58-61).

Kawashima et al (as modified by Yamashita et al) and Bos and are combinable because they are from the same field of endeavor, i.e. tracking systems.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to filter the colors and process only a particular color.

The suggestion/motivation for doing so would have been to provide a specific use in the tracking system, such as tracking a tail light.

Kawashima et al (as modified by Yamashita and Bos et al) does not disclose expressly that the color filter has any one of the three primary colors arranged for each pixel.

Examiner takes official notice that it is well known in the art to separate primary colors, RGB, in a color filter.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to filter RGB.

The suggestion/motivation for doing so would have been to provide a user-friendly system by using a common way to separate colors.

Therefore, it would have been obvious to combine the system of Kawashima et al (as modified by Yamashita et al) with the tracking of red of Bos et al and the RGB filter of the Examiner's official notice to obtain the invention as specified in claim 12.

41. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view of U.S. Patent No. 3564132 (Baker et al).

Regarding claim 29, Kawashima et al discloses all of the claimed elements as set forth above, and incorporated herein by reference.

Kawashima et al does not disclose expressly that the controller is configured to switch from said second mode to said first mode based on an output from the stereoscopic image processing system which indicates the absence of an object

detected in the image data. In particular, Kawashima et al does not disclose expressly what to do when there is an absence of the object in image data at all.

Baker et al discloses when there is an absence of a person, the system resets (col. 7, lines 14-15). When the system of Kawashima et al resets, then the second mode would switch directly into the first mode, since the first mode is the first step of the system.

Kawashima et al and Baker et al are combinable because they are from the same field of endeavor, i.e. image tracking.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to reset the system when no an absence is found.

The suggestion/motivation for doing so would have been to provide a way for more users to use the system by reading the system for another person, thus being a more cost-friendly, user-friendly system.

Therefore, it would have been obvious to combine the system of Kawashima et al with the resetting of Baker et al to obtain the invention as specified in claim 29.

42. Regarding claim 30, Kawashima et al discloses the positional control portion is configured to control the positions of the cameras allow for photographing directions different from each other (fig. 16, Θ_{m1t} and Θ_{m2t}) as seen in fig. 15, when the 2D measurement portion conducts 2D measurement, since the cameras follow an object (col. 15, lines 27-30) and controls the positions of the cameras so that the cameras photograph an overlapping range when the stereoscopic measurement is conducted,

since the cameras are controlled to track an object as allowed by items 12a and 12b of fig. 14, thus overlapping a range since the object must be in both the images.

43. Claims 15, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima et al in view of Yamashita et al, as applied to claims 1 and 21 above, and further in view of Baker et al.

44. Claim 15 is rejected for the same reasons as claim 29. Thus, the arguments analogous to that presented above for claim 29 are equally applicable to claim 15. Claim 15 distinguishes from claim 29 only in that they have different dependencies, all of which have been previously rejected. Therefore, prior art applies.

Kawashima et al (as modified by Yamashita et al) and Baker et al are combinable because they are from the same field of endeavor, i.e. image tracking.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to reset the system when no an absence is found.

The suggestion/motivation for doing so would have been to provide a way for more users to use the system by reading the system for another person, thus being a more cost-friendly, user-friendly system.

Therefore, it would have been obvious to combine the system of Kawashima et al (as modified by Yamashita et al) with the resetting of Baker et al to obtain the invention as specified in claim 29.

45. Claims 24 and 25 are rejected for the same reasons as claims 29 and 30. Thus, the arguments analogous to that presented above for claims 29 and 30 are equally

applicable to claims 24 and 25. Claims 24 and 25 distinguish from claims 29 and 30 only in that they have different dependencies, all of which have been previously rejected. Therefore, prior art applies.

Conclusion

46. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 20050002544, US 20050232460, US 6721444, US20030085992, US 20020044204.

47. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen S. Yuan whose telephone number is (571)272-2902. The examiner can normally be reached on Monday to Thursdays, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KY
5/31/2007

JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER